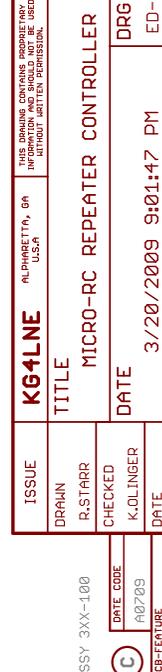
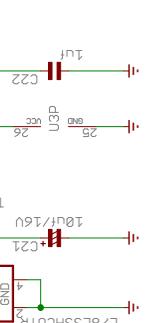
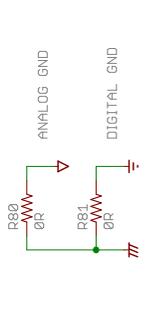
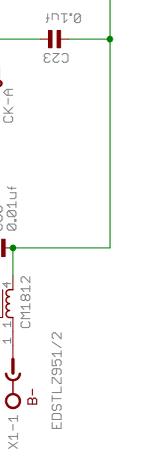
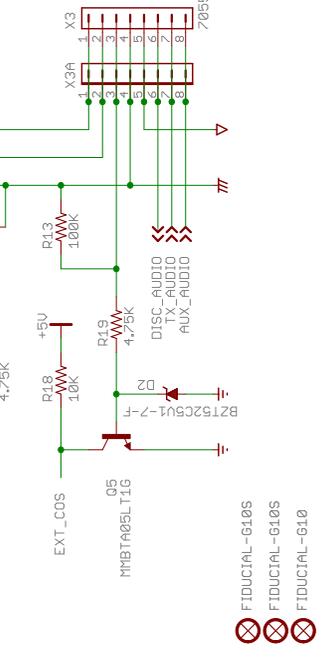
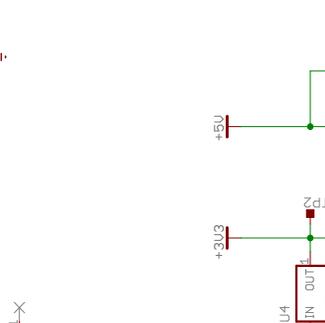
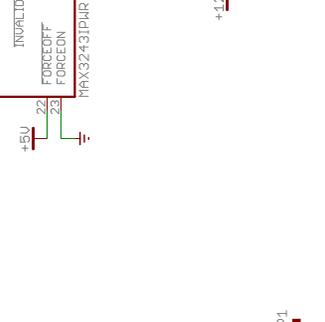
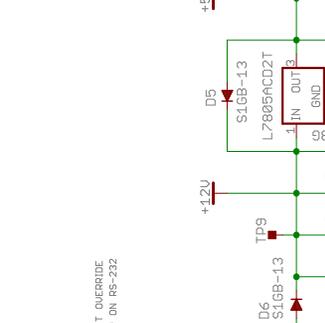
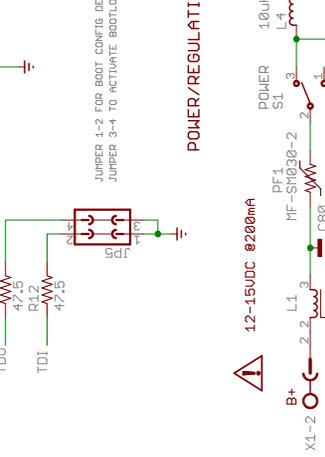
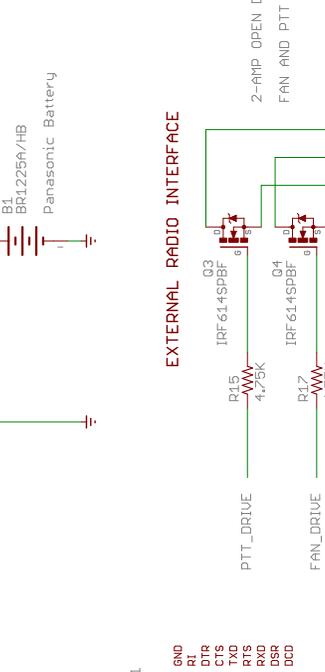
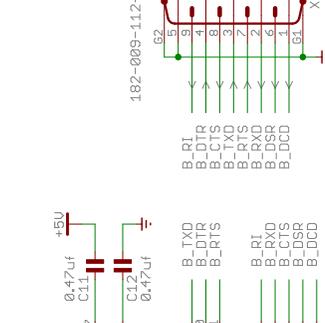
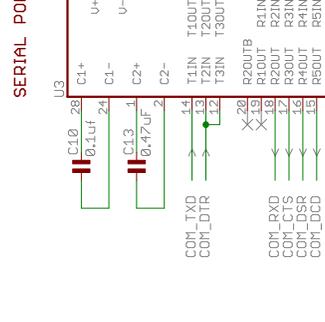
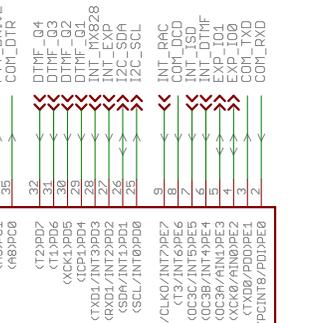
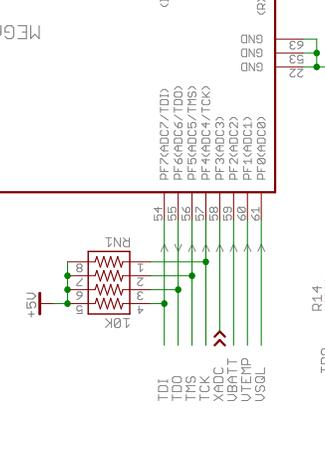
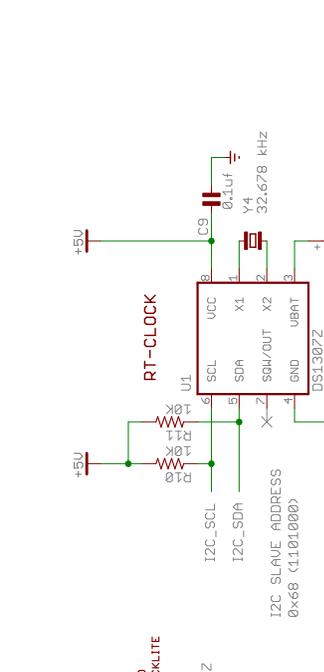
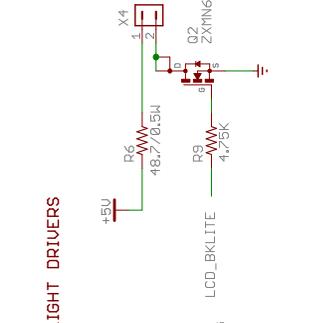
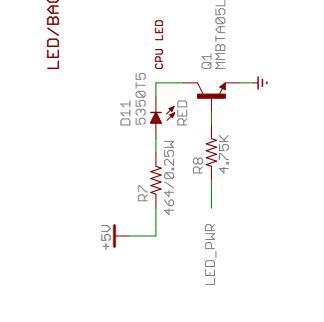
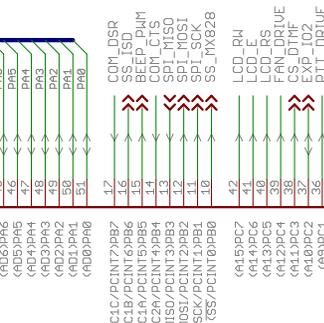
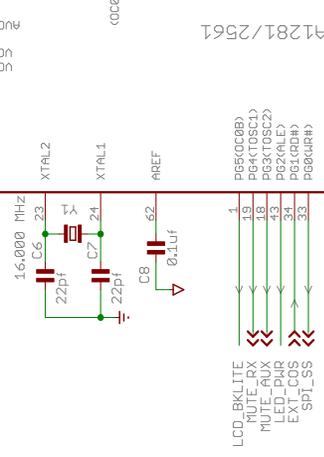
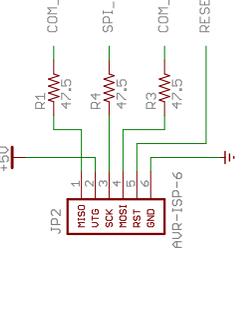
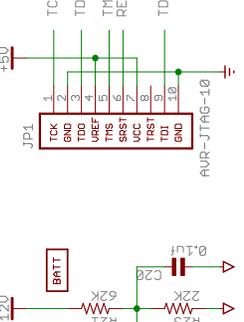
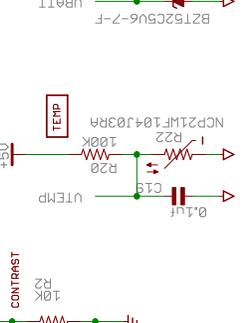
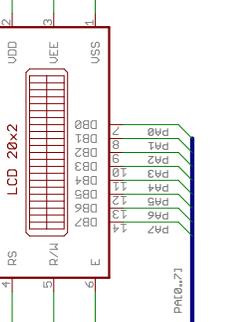
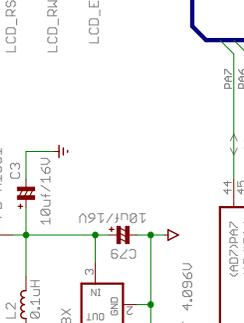
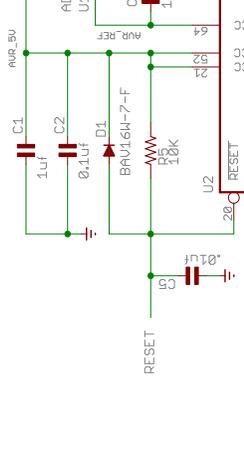


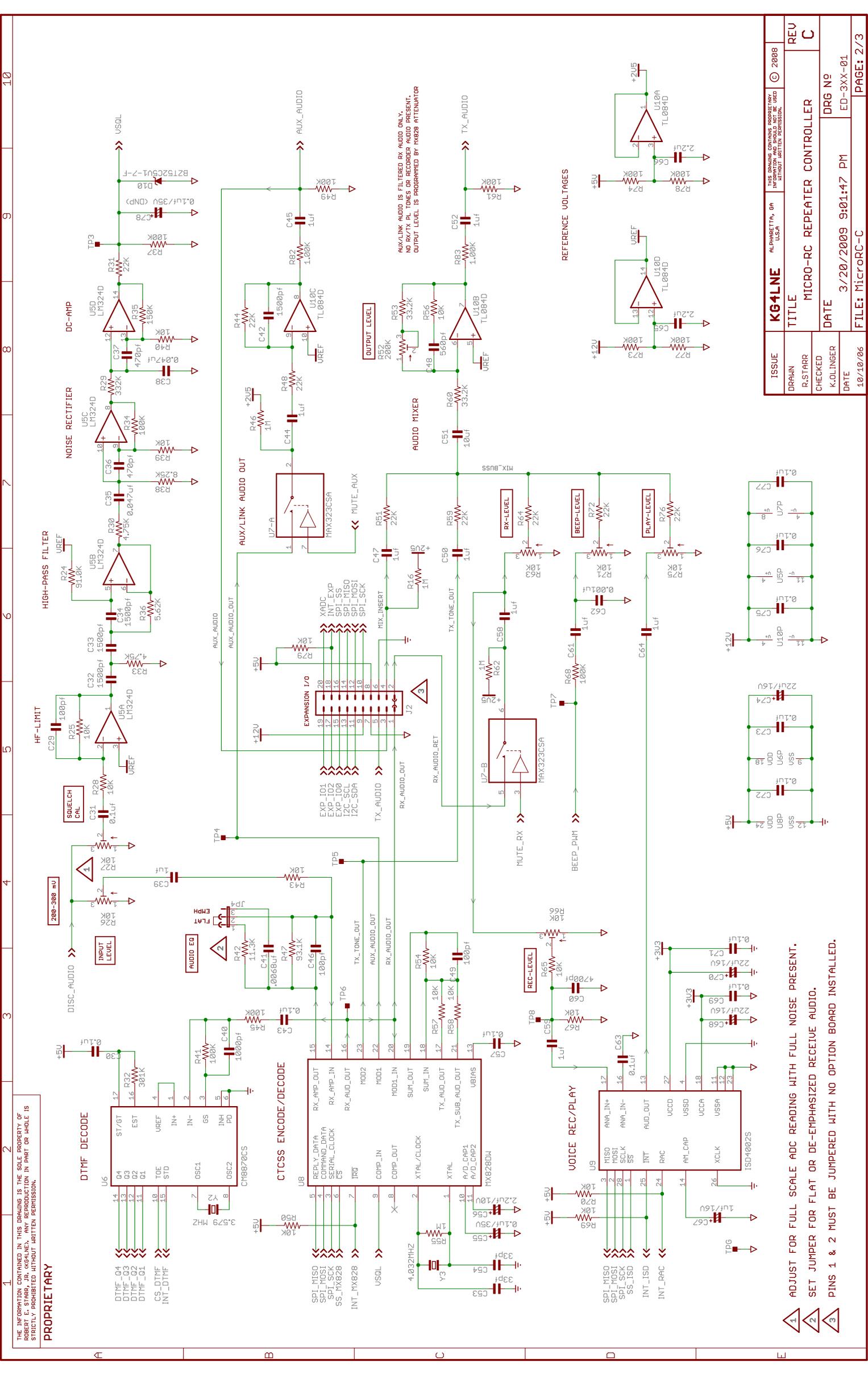
THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ROBERT AT VENTURA. ANY REPRODUCTION IN PART OR WHOLE IS STRICTLY PROHIBITED WITHOUT WRITTEN PERMISSION.

PROPRIETARY



ISSUE	DATE	FILE:	10/10/06
DRAWN	DATE	LAYER:	CHECK-4
R.STARR	A0709	PCB-FEATURE	
CHECKED			
K.DLINGER			
TITLE	DATE	DRG N°	ED-3XX-01
MICRO-RC REPEATER CONTROLLER	3/20/2009 9:01:47 PM		
REV			
C			

ASSY 3XX-100
DATE CODE
A0709
PCB-FEATURE
LAYER-CHECK-4



THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ROBERT AT STUBBS AND COMPANY. ANY REPRODUCTION IN PART OR WHOLE IS STRICTLY PROHIBITED WITHOUT WRITTEN PERMISSION.

PROPRIETARY

ISSUE	K64LNE	DATE	10/10/06
DRAWN	ALPHABETTA, GA	DATE	3/20/2009 9:01:47 PM
R-STARR	TITLE	DRG N°	ED-3XX-01
CHECKED	MICRO-RC REPEATER CONTROLLER	FILE:	MicroRC-C
K.DLINGER	REV		PAGE: 2/3
DATE	C		

U10A	TL084D
U10B	TL084D
U10C	TL084D
U10D	TL084D
U5A	LM324D
U5B	LM324D
U5C	LM324D
U5D	LM324D
U7-A	MAX323CSA
U7-B	MAX323CSA
U9	ISD4002S
J2	EXPANSION I/O

RESISTORS	RESISTOR VALUE
R1	10K
R2	10K
R3	10K
R4	10K
R5	10K
R6	10K
R7	10K
R8	10K
R9	10K
R10	10K
R11	10K
R12	10K
R13	10K
R14	10K
R15	10K
R16	10K
R17	10K
R18	10K
R19	10K
R20	10K
R21	10K
R22	10K
R23	10K
R24	10K
R25	10K
R26	10K
R27	10K
R28	10K
R29	10K
R30	10K
R31	10K
R32	10K
R33	10K
R34	10K
R35	10K
R36	10K
R37	10K
R38	10K
R39	10K
R40	10K
R41	10K
R42	10K
R43	10K
R44	10K
R45	10K
R46	10K
R47	10K
R48	10K
R49	10K
R50	10K
R51	10K
R52	10K
R53	10K
R54	10K
R55	10K
R56	10K
R57	10K
R58	10K
R59	10K
R60	10K
R61	10K
R62	10K
R63	10K
R64	10K
R65	10K
R66	10K
R67	10K
R68	10K
R69	10K
R70	10K
R71	10K
R72	10K
R73	10K
R74	10K
R75	10K
R76	10K
R77	10K
R78	10K
R79	10K
R80	10K

1 ADJUST FOR FULL SCALE ADC READING WITH FULL NOISE PRESENT.
 2 SET JUMPER FOR FLAT OR DE-EMPHASIZED RECEIVE AUDIO.
 3 PINS 1 & 2 MUST BE JUMPERED WITH NO OPTION BOARD INSTALLED.

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF ROBERT STUBBS AND ASSOCIATES, INC. ANY REPRODUCTION IN PART OR WHOLE IS STRICTLY PROHIBITED WITHOUT WRITTEN PERMISSION.

PROPRIETARY

REVISION HISTORY

REV-B <01/25/2007>

- 1) Changed CPU from ATmega128 to ATmega1281 for additional SRAM memory <4k->8k>
- 2) Changed serial port driver U3 caps C10, C11, C12 and C13 from electrolytic to chip cap 0805 packages.
- 3) Added pull-down resistor R13 on COS input of CN3 to prevent base of Q13 from floating.
- 4) Added tantalum cap C78 on squelch ADC buffer amp (IC50 output) for low pass filtering of ADC input signal.
- 5) Increased expansion I/O connector JP5 pin count to include SPI and I2C buss signals.
- 6) Swapped I/O pins PC3 and PD2 to provide an interrupt capable pin on the expansion port.
 PC3 is now INT_COS and PD2 is now INT_EXP (INT2).
- 7) Changed all small electrolytics to tantalum packages.
- 8) Swapped trim pot pins 1 & 3 on R52 (output level) and R2 (LCD contrast) to fix incorrect rotation/gain action.
- 9) Added U12 for 4,096V precision ADC voltage reference to AVCC.
- 10) Added L1 common mode choke and C80 on power input for additional noise protection.
- 11) Omitted L5 and L6, replaced with 0R jumpers R80 and R81
- 12) Omitted D2, D3 and B1 Goldcap. Changed B1 to BR1225 battery.
- 13) Changed Q3 & Q4 from IRF1010 to IRF614 for lower current/cost.

REV-C <06/21/2007>

- 1) Added R82 and R83 to fix op-amp HF oscillation problem.
- 2) I/O pin PD2 changed - assigned to ISD_RAC (INT7) for interrupt capable pin.
- 3) I/O pin PC0 changed - assigned to COM_DTR.
- 4) I/O pin PC1 changed - assigned to PTT_DRIVE.
- 5) I/O pin PE2 changed - assigned to EXP_PC0 on expansion port.
- 6) I/O pin PE3 changed - assigned to EXP_PC1 on expansion port.
- 7) I/O pin PE6 changed - assigned to COM_DCD.
- 8) I/O pin P65 changed - assigned to LCD_BKLITE
- 9) I/O pin P61 changed - assigned to EXT_COS
- 10) I/O pin PB4 changed - assigned to COM_CTS
- 11) I/O pin PB7 changed - assigned to COM_DSR
- 12) I/O pin PC3 changed - assigned to CS_DTMF
- 13) I/O pin PF7 changed - assigned jumper J3 to TDI, added R12
- 14) Added D2 (BZT52C5V1-7-F) and changed value of D10 to 5.1V (BZT52C5V1-7-F)

ISSUE	K64LNE	ALPHABETTA, GA USA	THIS DRAWING CONTAINS PROPRIETARY INFORMATION AND SHOULD NOT BE USED WITHOUT WRITTEN PERMISSION.	© 2008
DRAWN	TITLE	REV		
R-STARR	MICRO-RC REPEATER CONTROLLER	C		
CHECKED	DATE	DRG N°		
K.DLINGER	3/20/2009 9:01:47 PM	ED-3XX-01		
DATE	FILE: MicroRC-C	PAGE: 3/3		
10/10/06				